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This article presents a contemporary view on the state-of-the-art of applied conversation analytic studies of medical consultations. I begin by considering why conversation analysts might have been drawn to studying the medical consultation in the first place and how our foundational studies have paved the way to where we are now. I argue that we have provided evidence for a wide range of practical problems and dilemmas faced by patients and doctors (and their solutions) during these encounters; contributed new evidence to sociological debates / critiques of medical dominance; taken up consumer reformist agendas; and begun to demonstrate the practical enactment (or not) of health policies and new healthcare technologies 'in the wild'.

The review highlights a trajectory towards intervention studies in response to increased 'outside' interest from the medical community. I argue that although our current observation base may already have the potential to improve patient care, making a difference will require going beyond description to provide different levels of evidence for different stakeholder audiences. Data are presented in American and British English.

Rebecca Barnes

University of Bristol, April 2019

CONVERSATION ANALYSIS OF COMMUNICATION IN MEDICAL CARE: DESCRIPTION AND BEYOND

The essential unit of medical practice is the occasion when, in the intimacy of the consulting room or sick room, a person who is ill, or believes himself to be ill, seeks the advice of a doctor whom he trusts. This is a consultation, and all else in the practice of medicine derives from it. (Spence, 1960, p. 273).

Overview and Background

Over the last 35 years or so, a substantial body of findings has accumulated about the recurrent practices through which actions are designed, sequences are organised, and activities are accomplished in medical consultations. These findings have been built from an observational base of thousands of recorded encounters between patients and doctors in many countries around the world. We have also provided evidence for a wide range of practical problems and dilemmas faced by patients and doctors (and their solutions) during these encounters; contributed new evidence to sociological debates / critiques of medical dominance; taken up consumer reformist agendas; and begun to demonstrate the practical enactment (or not) of health policies and new healthcare technologies 'in the wild'.

We have gone about our research in a systematic way focusing much of it on activity phases in the medical consultation. This has ensured that our findings have the potential to be meaningful to a wide range of beneficiaries and can support comparative work across medical specialties, health systems and cultures. The study of communication in medical care requires considerable commitment on the part of researchers largely due to the ethical, economic and practical barriers to access. However we are addressing some of these barriers by creating methodological guidance and data archives with permissions in place for reuse to support our work and to enable secondary analyses. As well as identifying and providing detailed descriptions of medical practice, our evidence base has allowed for the possibility of quantitative analysis and cross-national comparison. Indeed we are now able "to isolate the impact of specific utterances, utterance designs, and sequences on decision-making in medicine" (Heritage, 1999, p. 72).

Although the majority of our work remains descriptive, for some of us, our research questions are broadening to include correlational and effectiveness studies, moving from “pre-intervention” towards “intervention” stage (Robinson & Heritage, 2014). We are applying our methods in a wider range of study designs including cross-sectional, before-and-after and even randomised controlled trials. However for most of us this advancement into new territories is also a learning edge bringing many challenges.

This article builds upon previous commentaries and reviews in this area (Barnes, 2005; Beach, 2013; Drew, Chatwin & Collins, 2001; Gill & Roberts, 2013; Heritage & Maynard, 2006a; Peräkylä, 1997; Pilnick, Hindmarsh & Gill, 2009; Robinson & Heritage, 2014) to provide a contemporary view on the state-of-the-art of conversation analytic (hereafter CA) studies of medical consultations. I begin with considering why conversation analysts might have been drawn to studying the medical consultation in the first place. I look back to some of the earliest studies of interaction between patients and doctors and consider how these have paved the way to where we are now. I then reflect on the current state-of-the-art of CA studies of communication in medical care. Finally I consider where we appear to be going, as well as what may be needed.

Why study the medical consultation?

As argued by English paediatrician Sir James Spence, the consultation is the “essential unit of medical practice” (1960, p. 273). In General Practice a full-time doctor routinely seeing on average 30 patients a day will consult with over 240,000 patients during their working career. In England alone, over one million GP consultations happen every day. Clinicians and academics and alike have argued that the consultation is also a social and relational situation (Balint, 1956; Goffman, 1964; Heritage & Maynard, 2006a). It follows therefore that communication in medical care is central to both clinical treatment and relationships between professionals and patients, and that poor medical communication will be consequential for relationships and consultation outcomes.

It is unsurprising then that communication is also central to patients’ and their caregivers’ experiences of care and consistently at the heart of complaints about medical services. In 2017-8 the largest proportion of written NHS complaints in primary care were about contacts with doctors – the top two subject areas being

clinical treatment and communication (NHS Digital, 2018). Similarly the largest proportion of hospital and community health services complaints were about communications with medical professionals (NHS Digital, 2018).

In understanding how the everyday tasks and goals of the medical consultation are accomplished, we can open a window to the challenges and socio-medical dilemmas faced by professionals and patients along the way. Medical care is constantly subject to structural, policy, organisational, and technological changes. Yet when it comes to evaluating 'macro' level changes, attention is seldom paid to "the 'micro' level of the doctor-patient relationship" (Waitzkin & Stoeckle, 1967, p. 263). By studying how changes, for example in health policy, play out at the micro level in everyday practice, we can understand the real impacts on patients and doctors, their relationships and quality of care.

Our observations can identify what good practice looks like in routine medical encounters, for example around activities such as agenda-setting and participatory decision-making. If evidence can be demonstrated for improved consultation outcomes, these findings may be used to inform recommendations for implementing these practices more widely. They may also provide for change via incorporation into communication-based interventions or evidence-based training for doctors.

How did we get here?

At the core of the evidence base generated by CA studies of communication in medical care are thousands of recordings of naturally-occurring, everyday conversations between doctors and patients / companions. Yet conversation analysts are not the first disciplinary group to have been drawn to recording and analysing consultations data. In the 1950's, ideas began to emerge for analysing the consultation and for the teaching and learning of consultation skills.

For example in the UK, psychoanalysts Michael and Enid Balint were establishing a method for training General Practitioners (GPs) in how to research and analyse their everyday consultations. Balint felt:

the events that I wanted to get hold of could be observed only by the doctor himself; the presence of a third person, however tactful and objective, would inevitably destroy the ease and intimacy of the atmosphere (1957, p. 3).

The 'Balint group' method, founded on psychoanalytic ideas, pioneered the notion that at the centre of medicine there is always a human relationship between a patient and a doctor and that this could be consequential for the consultation outcome:

The doctor's response to the patient's offers, or to the presenting symptom, is a highly important contributory factor in the vicissitudes of the developing illness (Balint, 1957, p. 36).

Notably, the original Balint groups combined research and training, publishing their own studies on patterns observed by doctors in their routine consultations with patients (for example see Bailey, 1979 on home visiting, Balint, Hunt, Joyce, Marinker & Woodcock, 1970 on repeat prescribing; and Clyne, 1961 on night calls).

In the US, paediatrician Barbara Korsch and her team (including a medical sociologist and a statistician) designed the first large scale study to explore the relationship between communication during the medical consultation and outcomes in terms of satisfaction and response to medical advice, in an "effort to introduce more objective principles to this important facet of medical practice" (Korsch, Gozzi & Vida, 1968, p. 855). The team collected 800 audio-recordings of urgent care walk-in clinic visits with 64 paediatric doctors in a children's hospital; medical record entries relating to the index visit; immediate post-visit interviews and follow-up interviews with parents at 14 days. Compliance with medical advice was found to be correlated with the extent to which the visit met parents' expectations and main concerns.

In the UK too, the 1970s witnessed a shift towards the collection of audio-recordings of routine consultations. Working within the Department of General Practice at Manchester University, GP Patrick Byrne and Barrie Long conceived of a ground-breaking study resulting in the 1976 publication 'Doctors Talking to Patients'. Sixty GPs were invited to record complete morning and evening surgeries. The final dataset consisted of over 2500 audio-recorded consultations. The recordings were transcribed verbatim and the duration of all doctor and patient speech, silence and overlapping talk ('confused noise') logged.

The dataset enabled Byrne and Long to characterise common doctor behaviours through six phases in the consultation: Relating to the patient; Discovering the reason for the patient's attendance; Conducting a verbal or physical examination

or both; Consideration of patient condition; Detailing treatment or further investigation; and Terminating. Observations about doctor behaviours captured in the recordings, and whether they were deemed to be doctor or patient-centred enabled the authors to theorise about which facilitated, or were barriers to, the therapeutic relationship.

Notably, the main output from the study was an educational intervention. Participating GPs were invited to score their own behaviours against a list of doctor vs patient-centred behaviours with a view to modifying their practice. The study is still widely referenced today both in consultation skills teaching and research.

It was our intention, if such an analysis proved possible, to see if the resultant material could be used to improve the doctor's consultation potential by offering him a wider range of behaviours from which he could choose to learn and use, as he considered appropriate (Byrne, 1976, p. 52)

Back across the Atlantic, US physician Eric Cassell was exploring the question of how doctors could use language for the maximum benefit of their patients.

Spoken language is our most important diagnostic and therapeutic tool and we must be as precise in its use as is a surgeon with a scalpel (Cassell, 1985, p. 4).

Cassell collected over 1000 hours of audio-recorded consultations with 800 patients. The recordings were transcribed to include details of speech delivery and intonation. The analysis focused on the information that patients had to offer including their descriptions of themselves and their illnesses; and on history taking as "an exchange of information" (Cassell, 1985, p. 4).

Around the same time, psychiatrist Elliott Mishler published 'The Discourse of Medicine', based on a secondary analysis of a subset of transcripts from an archive of primary care consultations collected by US physician Howard Waitzkin. Mishler's (1985) interpretative analysis focused on how, as a result of the doctors' behaviours during information gathering, patients' social problems could be overlooked. Mishler characterised this as a struggle for dominance where the "voice of the lifeworld" is constantly 'interrupted' by the "voice of medicine" (1984, p. 14). We shall see later how the notions of the social epistemology and social relations and of asymmetries between doctors and patients have both remained an important part of CA studies of communication in medical care.

Due to longstanding interest in the area, esteemed colleagues have already made substantial contributions to taking stock of the field and its provenance (Beach, 2013a; Gill & Roberts, 2013; Heritage & Maynard, 2006a; Pilnick et al. 2009). A few key collections also deserve a mention.

In 2001, Beach guest-edited a Special Issue of the journal *Text*, entitled 'Lay diagnosis'. The Special Issue included contributions from key researchers in the area: Jeff Robinson, Tanya Stivers, Paul Drew, Paul ten Have and Virginia Gill. The articles contributed all emphasise the key part played by patient-initiated and patient-solicited actions in the medical visit. Beach's contributions to the field also include a large edited collection of research published in 2013 where key CA studies are interspersed with key papers from the wider field of medical communication spanning fifty years (1957-2007).

One of the most influential texts in the area has been the set of studies brought together in the book 'Communication in Medical Care,' edited by John Heritage and Doug Maynard. The book follows the classic 'phase structure' of the medical visit from opening through problem presentation, history-taking, examination, diagnosis and treatment to closing. Although this collection was published in 2006, some of the pioneering studies within reach further back e.g. referencing Heath's (1986) work on bodily conduct.

In the following section I review CA research on communication in medical care published since the most recent review by Gill and Roberts (2013). Unlike Gill and Roberts, for reasons of scope, I only review research on medical interaction between doctors and patients / caregivers (with the exception of psychiatry - but see Peräkylä, this issue), excluding other streams of research.

The current state-of-the-art

Research on medical consultations in primary care settings

As highlighted in previous reviews of the field (e.g. Drew et al., 2001; Barnes, 2005; Heritage & Maynard, 2006a; Pilnick et al., 2009; Gill & Roberts, 2013), most CA studies in the area have focused on acute-care visits between doctor-patient dyads or doctor-patient-parent triads in the primary care setting. Our common observational base here has largely been built on US (Robinson, Heritage,

Stivers) and UK (Heath) datasets although data from Finnish (Peräkylä) and Dutch (ten Have) primary care has also been foundational.

In the last five years, the acute-care visit has continued to furnish new observations, for example, in the US on agenda-setting (Robinson & Heritage, 2015; Robinson, Tate & Heritage, 2016) and the physical examination (McArthur, 2018); in the UK on how GPs manage online resources during primary care visits (Stevenson et al., 2019), how preliminaries to treatment recommendations can offer opportunities for shared decision-making (Barnes, 2018), and in Denmark on contingency planning (Nielsen, 2017).

There has also been a trend towards studies addressing questions aligned to public health agendas. This has included work on parents' lobbying practices for antibiotics in Chinese primary care (Wang, 2017); work in the UK on GPs' offers for patient sickness certification comparing mental health vs physical health problems (Wheat, Barnes & Byng, 2015); and work in the US on vaccine recommending practices in paediatric health supervision visits (Opel et al. 2015; Hofstetter et al. 2017). Motivated by public health concerns over falling vaccination rates, Opel and colleagues have investigated the influence of presumptive vs participatory health care professional recommending practices on parent resistance to the uptake of childhood and influenza vaccines.

Notably there has also been a substantive return to two key phases in the primary care visit: the delivery of diagnoses and treatment planning. It has now been over 25 years since Peräkylä's (1998) and Heath's (1992) foundational CA studies on the delivery of diagnoses in Finnish and UK primary care respectively. Recently, new work focusing on the 'diagnostic moment' as an emergent phenomenon, shaped by participants' interactional concerns and projects, has been completed in the US (Heritage & McArthur, 2019). The extract below illustrates the diagnostic utterance and subsequent patient response:

From Heritage & McArthur (2019, p. 264)

DOC: You have an Achilles' tendon tear.

(1.2)

PAT: Uh huh.

(1.5)

DOC: ((clears throat)) A::nd u::h (2.0) it may require surgery.

(0.5)

PAT: #Oh Lord.#

Compared to the historical work on diagnosing practices, there has been a lack of similar systematic attention to treatment planning in primary care. However this very topic has recently been the object of a collective cross-national investigation (Stivers & Barnes, 2017). Building on Stivers' earlier work, this investigation has focused on how treatment recommendations for new medicines are designed by doctors, and the contexts in which they are occasioned. Stivers et al. (2017) report findings from a study of 697 treatment recommendation-response sequences drawn from a large combined dataset of video and audio-recordings of adult patient acute primary care visits collected with 93 doctors between 1997-2015. Stivers et al. (2017) describe five common recommendation action formats (pronouncements, suggestions, proposals, offers, and assertions), and demonstrate how each encodes epistemic and deontic dimensions of authority in their design to a variable extent (see below).

Overview of coding dimensions (From Stivers & Barnes, 2017)

Dimension	Options	Explanation	Example
Social action	Pronouncement	Physician asserts recommendation as instigator, decision maker and presents as already determined	"I'll start you on X"
	Suggestion	Physician recommends as instigator but treats patient as decision maker and medication as optional	"You could try X"
	Proposal	Physician recommends as instigator but decision making is treated as shared by doctor and patient. Proposals highlight the recommendation as speculative	"Let's try X and see how that goes"
	Offer	Physician treats patient as having instigated recommendation and as the decision maker, thus treating medication as having been occasioned	"Would you like me to give you X"
	Assertion	Physician asserts a generalization about a treatment's benefit implying a recommendation but not proffering an overt directive.	"X is good for this"

They show how pronouncements – a fully authoritative action type that highlights the decision as already determined - were the most frequent format used to recommend new medicines in both countries, and that US doctors used them more frequently.

Continuing the cross-national theme, Bergen et al. (2018) compared US and UK

patients' grounds for resistance to treatment recommendations. They demonstrate that whilst US patients displayed an expectation for prescription as opposed to over-the-counter medicines, UK patients displayed more caution in their responses to recommendations for any type of medicine. In their analysis, Bergen et al. show how, "cultural definitions of good-practice prescribing are jointly constructed by patients and physicians" (2018, p. 1388).

Research on medical consultations in outpatient and inpatient settings

More recently, CA researchers have been breaking with the primary care tradition to investigate doctor-patient communication in other medical specialties. Three areas in particular – decision-making around end-of-life, oncology and neurology – have been the focus of concerted efforts. I briefly review each below drawing out common themes and differences.

Despite methodological challenges, one growing trend has been a focus on end-of-life conversations as evidenced by a recent Special Issue in the journal 'Patient Education & Counseling' edited by Pino and Parry (2019a). The rationale for this work builds around a core communication dilemma – there is an expectation in clinical guidelines for open discussion of patients' feelings, expectations and preferences around end-of-life care, yet the initiation and timing of such discussions require the utmost sensitivity as they can destroy hope and be unwelcome or too late.

In the UK VERDIS project that has provided a dataset of 37 recorded consultations (33 video, 4 audio) between terminally ill patients, their companions and five palliative medicine doctors, Pino et al. (2016) report how experienced palliative medicine doctors in a hospice setting routinely navigate this tension working off subtle 'cues' using 'elaboration solicitations' to engage patients, their companions in end-of-life discussions. Land et al. (2018) have identified 'hypothetical scenario sequences' as a resource, employed by palliative medicine doctors during conversations with patients, for sensitively attending to possible contingencies around patients' current plans and expectations for end-of-life care. Pino and Parry (2019b) have also recently reported on how doctors and patients in the hospice setting navigate the constraints around life-expectancy talk – focusing on patients' information-seeking practices and the conversational environments that facilitate them.

Also focusing on end-of-life conversations but in paediatric palliative care, Ekberg et al (2018; 2019) focus on a small dataset of consultations across inpatient and outpatient settings between eight families and one palliative medicine doctor in Australia. The findings reported in Ekberg et al. (2018) focus on how discussions about deterioration come to be broached. In Ekberg et al. (2019) the focus of analysis is on how talk about death does not always need to be explicit for end-of-life discussions to be meaningful.

Shaw et al. (2016) have investigated decision-making conversations around end-of-life between nine families whose newborn babies were critically ill and six doctors in a UK neonatal intensive care unit. Consultations were audio-recorded and collected between 2013-2014. Their analysis focused on two very different strategies with very different trajectories in terms of opportunities for parental participation and alignment: making recommendations and providing options for parents as collaborative decision-makers.

In the US, Maynard and colleagues have reported recent work on end-of-life conversations in the oncology clinic setting based on secondary analysis of 64 audio-recordings collected between 2004-2009 from a randomised controlled trial of an e-health support intervention. Maynard, Cortez and Campbell (2016) focus on doctors' use of 'appreciation sequences' following the delivery of scan results whereby patients with ongoing advanced disease are encouraged to positively assess the outcomes of life-prolonging treatment they have received, and how these might allow an opportunity for consideration of 'prognostic awareness', an opportunity that is often missed. Using the same dataset, Cortez, Maynard and Campbell (2019) report on 'bad scan news cases' where the results show that patients' cancer treatment has been ineffective. The analysis focuses on doctors use of 'exhausted current treatment' statements and how the lack of response often leads doctors to move straight into further treatment talk potentially at the expense of allowing patients time to unpack this news and to talk about prognosis.

Beach's recent work on 150 video-recordings of US cancer clinic visits with 30 doctors has focused on the practices employed by doctors and patients to communicate 'good news' and minimise illness (Beach 2018); and how doctors make the case for wellness/sickness by determining what counts as 'normal' for example when discussing test results (Gutzmer & Beach, 2015).

Tate's (2018) study of 90 video-recorded oncology clinic visits in the US has focused on treatment decision-making employing the coding framework described earlier to identify different treatment recommending actions (see Stivers & Barnes, 2018). Tate compared physician recommending practices for new, mid-course and ancillary treatments, and how they invoke patient agency. Importantly, Tate found that mid-course treatment adjustments and ancillary treatments initiated by physicians were less likely to orient to patient agency compared to initial treatment decisions and ancillary treatments for patient concerns.

Collectively this body of work has begun to map the patient journey from diagnosis to treatment and in some cases through palliative and end-of-life care. In the context of cancer care, the benefits of CA research on communication for patients and doctors and a potential agenda for change can clearly be seen. For example, as argued by Robinson and Jagsi:

Given that patients' preferences for aggressiveness of care can depend on their understanding of prognosis, a key question is whether physician-patient communication about prognosis is sufficiently robust (2016, p. 1407).

Neurology clinics have also been the setting for a concerted programme of recent work. One strand of this work has been investigating the extent to which current UK health policy, in particular the 'patient choice agenda' around decision-making is being implemented in routine clinic appointments (Reuber, Toerien, Shaw & Duncan, 2015). To answer this question, 233 audio and video recordings of patient visits (first and follow-up) with 14 neurologists working in two different centres were collected alongside questionnaire data. The primary CA study found three main practices were being employed by clinic doctors to initiate decision-making around investigations, treatments and referrals: recommendations, option-lists and 'patient view elicitors'.

Although option-listing was the least common practice (24 visits), Toerien, Reuber, Duncan and Shaw (2018) report that visits where option lists were employed were mostly likely to be associated with the 'perception of choice' by both clinicians and patients post-visit.

They demonstrate how, in contrast to recommending practices where patients are usually on the backfoot, having to "work with (or against) an expert opinion" (Toerien, Shaw & Reuber, 2013, p. 886), option-listing can observably seek active participation by placing the decision in the patient's domain. As shown in the

fragment below, Toerien et al. (2018) also provide evidence to show how option-listing as a practice does not automatically lead to choice whether that be due to clinician adaptation during delivery or the nature of patient response.

From Toerien et al. (2018, p. 1256)

(Previous lines entail presenting two options)

Neu: .thhh Either >one of them,< (0.3) grab you?
(0.6)

Neu: Any: particular preference, (0.5) one or other,
(1.1)

Pat: hhh hhhh.

Naturally over time health policies and health technologies will bring about change in medical practice. It is reassuring therefore to see these policies reflected in the CA literature. For example, studies generating interactional evidence for how policy initiatives for example promoting ‘patient choice’ (e.g. Toerien et al. 2018) and ‘shared decision-making’ (e.g. Barnes, 2018), or clinical guidelines (e.g. Pino et al. 2016) actually play out in practice.

New territories

The questions driving CA research in medicine published over the last five years demonstrate movement from descriptive studies into new territories as set out and illustrated below:

- i. Descriptive studies (line-by-line, case-by-case, identification of practices of action, sequential trajectories and interactional consequences)
- ii. Observational-relational studies (transforming observations into interaction variables, cross-sectional, before-and-after studies)
- iii. Causal studies (efficacy of communication-based interventions, RCTs)

i. Descriptive studies

Our historical observational base is grounded in studies describing the practical problems and dilemmas faced by patients and doctors (and their solutions) in routine medical practice. This is what Antaki describes as “institutional applied CA” (2011, p. 6). As part of this descriptive work, comparison is integral to applied studies of medical consultations.

Talking about applied CA in general Drew and Sorjornen argue:

Research in this field should be comparative in scope, encompassing knowledge about both ordinary conversation and institutional discourse (preferably from a range of institutional settings) (1997, p. 110).

Some of the work featuring here has embraced this, broadening our framework for understanding medical interaction. For example, see Barnes' (2018) comparison of pre-sequences in ordinary conversation vs when they are used preliminaries to treatment recommendations; Dooley, Bass, Livingston and McCabe's (2018) comparison of recommending practices in memory clinics vs primary care; and Bergen et al.'s (2018) cross-national comparison of US and UK patients' contexts and grounds for resistance. A focus on activity phases in the medical consultation and the practices that constitute these has therefore enabled comparison across medical specialties, health systems and cultures.

Comparative descriptive work may also help us map out the interactional dilemmas being managed by patients and practitioners across different settings. For example the issue of "doctorability" (Heritage & Robinson 2006a, p. 58) may be of less concern and thereby less consequential for patients visiting secondary care outpatients clinics than during first presentations to primary care.

ii. Observational-relational studies

Methodologically, in the discipline as a whole, there has been a move away from single case analyses towards building collections of cases from large datasets. Perhaps it is unsurprising then that our approaches to working with data are changing too. Examples given here have included teams of researchers with separate datasets working as collectives – a method that has already borne fruit in cross-linguistic studies. Identifying cases across larger datasets has necessitated different approaches such as formal CA coding (Stivers, 2015). Methodologically, this is no mean feat. As Heritage says:

It has involved painstaking development of...specific, contextually defined and nuanced coding categories, and these remain very much a work in progress (2013, xii).

Examples mentioned here include Stivers et al. (2018) and Heritage and McArthur (2019).

This shift to working with larger datasets has also allowed CA researchers to enter new territory addressing observational-relational or 'correlational' questions. These

sorts of questions are often asked within larger mixed-methods studies that include the collection of demographic and other variables exogenous to the recorded medical visit (for an example see Chappell et al. 2018). The formal coding approach is providing us with, as Goffman (1964) might have put it, “a new bagful of indicators to do something correlational with” (p. 133). However it is widely accepted that associations between variables may be spurious - due to changes in another variable.

CA work in medicine has also recently been at the heart of a small set of before-and-after studies evaluating communication-based interventions. These studies offer a different level of evidence, moving us closer towards causal explanations. I describe two such examples below.

O’Brien et al.’s (2018) VOICE study reports the development and evaluation of a dementia communication training skills intervention. At the heart of the intervention was evidence from the analysis of video recordings of interactions between patients living with dementia and doctors and other healthcare professionals in the acute hospital setting. The two main communication behaviours or ‘trainables’ identified from the data were practices based around HCP-initiated requests for action and closing conversations with patients (Allwood et al., 2017). These were incorporated into a two-day course using experienced actor-patients trained to simulate real ‘cases’ from the data with participants. 45 HCPs were trained, and video-recordings of simulated interaction were made before and after training to assess communication behaviour change by two independent raters. Following training, whilst no significant changes in communication behaviours were found related to requesting practices, changes were found in participants’ communication behaviours during closings. At one month post-training, participants responding to a follow-up survey reported high levels of recall, use and utility of the skills learned.

Secondly, Jenkins and Reuber (2014) describe an evaluation of a communication-based intervention for neurologists to improve screening and diagnostic accuracy for epileptic versus non-epileptic seizures. The logic underlying the intervention is based on earlier work by Elisabeth Gülich and Martin Schöndienst in Germany identifying distinctive linguistic features in patients’ descriptive accounts of seizures during neurology clinic visits (for another study in the same diagnostic vein but with the aim to distinguish neurodegenerative versus functional memory disorders see Elsey et al. 2015). To solicit these accounts, the content of the intervention draws on

Heritage and Robinson's (2006b) findings around the interactional consequences of different opening question in primary care visits.

Prior to the training, 38 first patient visits were audio or video recorded with 10 doctors at two different UK neurology clinic sites. To promote the likelihood of extended tellings from patients about their seizure experiences, the doctors then received training in how to change their questioning and reciprocity techniques during a one-day course. The training employed real 'cases' of question-response sequences from the recorded data. Doctors were instructed (and provided with a script) to open consultations with general enquiries relating to patients' expectations for the visit and to encourage elaboration. They were also instructed to employ requests for information about a memorable seizure episode during history-taking, and question aspects of the account.

Post-training, 20 further first visits were recorded with seven of the original 10 doctors. Presenting an analysis of illustrative cases, Jenkins and Reuber (2014) report that in most consultations, doctors were able to implement the intervention as planned.

Many of us have made little or no attempt to relate our findings to exogenous variables of input or outcome. This is all well and good but it does have consequences for the evidential weight held by our findings and for any claims of effectiveness – particularly if the motivation for our work is to improve medical practice. If we seek to establish a causal connection, the 'gold standard' of evidence in the field of medicine is the randomised controlled trial.

iii. Causal studies

Working within the framework of randomised controlled trials (RCTs) a small number of recent studies have used the existing CA evidence base to inform the content of communication interventions to be delivered within medical consultations. Leydon et al. (2018) have reported a successful UK feasibility study for a RCT to test the effectiveness of the 'any/some' intervention first trialled successfully in the US by Heritage et al. (2007). The intervention draws on evidence from preference organisation in question design in ordinary conversation, and body behaviour and reciprocity in primary care visits (Heath, 1986). Targeting upfront agenda setting to reduce unmet patient concerns, the intervention tested for the polarising effect of 'some' versus 'any' in the question "Is there (some/any)thing else you would like to address in the visit today?".

The recent US DART trial (Dialogue around respiratory illness treatment: Optimizing communication with parents) has also drawn on findings from the existing CA descriptive and observational-relational evidence around antibiotic prescribing in paediatric visits (Mangione-Smith et al., 2015; Stivers, Mangione-Smith, Elliott, McDonald & Heritage, 2003; Stivers 2005) to inform the content of a communication training intervention targeting clinician communication behaviour change (Mangione-Smith et al., fth).

Despite the fact that training doctors to implement talk-based interventions appears to be possible, adaptations and deviations (mistakes and omissions) are not infrequent. CA can be a valuable tool in assessing the extent to which interventions are implemented as planned. In a retrospective analysis of video-recordings from the 'any/some' RCT, Robinson and Heritage (2015) demonstrated just that. Despite high levels of implementation fidelity by doctors, they found that patients' misunderstanding of the action being implemented by the intervention question – that it was making relevant new problems only - caused them to downgrade non-new problems in their responsive turns.

From Robinson and Heritage (2015)

DOC: O:kay and- (.) are there some (.) other issues?=
PAT: .h [Uh: *just] still thuh numbness;* uh:m I'm- (.)

DOC: [(Also,)]

PAT: I still have that,

(* denotes head shaking)

Other studies have found that when left to their own interpretive devices, intervention deliverers may deviate from training in subtle ways e.g. Barnes et al. (2018). This is more likely to happen when training has not included attention to understanding how these deviations are likely to be interactionally consequential (Robinson & Heritage, 2015).

Mode of intervention implementation can also affect delivery. One study investigated how what was ostensibly the same intervention - telephone triage for patients seeking same-day appointments to primary care - was delivered in two different arms of a multi-centre trial (Murdoch et al., 2014, 2015). Murdoch et al. (2014) used an existing formal CA coding scheme to code the content and form of questions in telephone triage encounters comparing GPs and nurses applying a

Clinical Decision Support System (CDSS). They found a higher frequency of questioning in nurse-led triage focused on information gathering, at the expense of eliciting patient or carer concerns or expectations. Murdoch et al. (2015) report an analysis of a subsample of the recorded nurse-led telephone triage consultations synchronised with video-recordings of nurses using the CDSS. Their analysis demonstrated how the CDSS-mediated telephone triage constrained the design of nurses' talk.

CA methods are capable of being used alongside other qualitative methods and quantitative methods (Heritage, 2009, p. 313). Interview data can provide important insights into the barriers and facilitators to implementation, such as the backdrop of “habits and pragmatics” (Heritage & Robinson, 2011:31) that can conspire against the introduction of any new practice. Furthermore, a CA approach can provide insight into how RCT personnel and participants accomplish talk-based trial procedures and interventions *in situ*. Understanding how both patient and practitioner communication behaviours can influence the content, delivery and receipt of an intervention is important. We are otherwise left with idealisations about how an intervention should work.

The future of CA and medical interaction research

Cross-sectional, before-and-after studies and CA-based communication interventions are currently at the leading edge of our field. These new territories of practice bring many challenges, taking us out of our comfort zone - away from our usual networks, dissemination routes and colleagues and from ‘unmotivated looking’, towards planning for impact and engagement with new stakeholders / journals / audiences such as patients themselves, doctors, medical educators, clinical guideline developers, technology developers and policy makers.

Although these advancements have brought some reward such as recognition within the wider field of medicine it also requires a note of caution. One concern is that most of our foundational work is now quite old. It is therefore reassuring that a programme of work is underway to replicate and/or refresh these basic findings. Working in these new territories will also involve further consideration of the most meaningful outcomes for our research. Avedis Donabedian’s eponymous model for assessing quality of care rests upon the assumption that:

before one can make judgements about quality, one needs to understand how patients and physicians interact and how physicians function in the process of providing care. Once the elements of process and their interrelationships are understood, one can attach value judgements to them in terms of their contributions to intermediate and ultimate goals (Donabedian, 1967, p. 193).

Currently, communication behaviours in medical consultations are being linked to increasing number of outcome phenomena including proximal within-consultation interactional measures (e.g. patient resistance to treatment recommendations, parental vaccine acceptance), immediate consultation outcome measures (e.g. prescription medication, number of unmet concerns), patient-reported relational measures (e.g. consultation satisfaction), and more distal outcome measures (e.g. response to medical advice).

A common methodological concern is that we still tend to privilege linguistic over what Goffman (1964, p. 133) termed “nonwriteable” resources such as gaze, gesture and touch in our analyses. Friedman reminds us:

Touch may have symbolic value in healing, may create positive expectation, may have important physiological effects, and, even when used for strictly diagnostic purposes, may affect the interpersonal nature of the practitioner-patient interaction (1979, p. 89).

Perhaps more frequently than in primary care, consultations in other medical specialties are triadic or multi-party where patients may be supported by companions such as family members or friends, and doctors may be task-sharing with other health professionals or hosting trainees. Systematic consideration of how participants manage these problems in real time, via turn-allocation and turn construction practices, grammatically, prosodically and non-vocally will add depth to any analysis.

Current work in the field continues to demonstrate analytic interest in asymmetries of knowledge, expertise and authority between doctors and patients. Much of this work has focused on doctor-initiated actions in pursuit of more ‘equal’ practices, for example, those encoding patient participation in decision-making. Arguably a focus on patient resistance is the other side of the coin but far less systematic attention has been paid to this in terms of position and composition. For example, most analyses have focused on participants’ immediate responses rather than pre-emptive resistance, and neglect what happens post-hoc in terms of patients’

accounts and/or doctors' subsequent persuasive practices (although see Bergen et al. 2018; Stivers & Timmermans, fth).

We are spread across many different academic departments from traditional sociology or social science departments to medical schools. Other medical researchers are becoming interested in what we do and our colleagues are changing. We are becoming more successful at attracting external funding for our work. Many of us are working in researcher-clinician partnerships or as part of multi-disciplinary teams. Indeed the majority of 'interventionist applied CA' work on communication in medical care appears to have involved collaboration between CA researchers, clinical and statistics colleagues. Although this can bring challenges in itself, it can be essential to reassure funders, ensure an understanding of the specific tasks / goals and communication dilemmas particular to that setting, access to research participants, and meaningful pathways to impact.

Beach recommends:

fostering collaborations involving a broad array of professionals, each possessing unique technical expertise and focusing on specific aspects of clinical encounters (2013, p. 1).

It is becoming more acceptable to collect video-recordings of medical consultations and ask participants for their advance permissions to reuse (Parry, Pino, Faull & Feathers, 2016). We now have resources such as the 'ARCH Corpus of Health Interactions' in New Zealand and the 'One in a Million primary care consultations archive' in the UK (Barnes, 2017; Jepson et al., 2017).

Most fundamentally however, the success of applied CA in any area rests wholly upon traditional basic CA skills. With a growing expectation of CA researchers now working in medicine to have wider mixed-methods training e.g. in evidence synthesis and statistical analyses, we need to ensure their basic CA skills are strong enough to bear the analytic weight being put upon them.

It is possible that focused attention on singular activities in key doctor-initiated 'phases' of the medical consultation such as history-taking, delivering diagnoses and treatment recommendations might have distracted us from seeing most medical consultations as essentially patient-initiated. Although the nature and context of medical care has changed over time, from a CA perspective the general problem between persons seeking help and medical professionals, for which they both have procedural "solutions", remains the "recruitment" of medical assistance (Kendrick &

Drew, 2016). This concept aligns with Balint's formulation of the general problem with the medical consultation, "how should the doctor 'respond' to the patient's 'offers' so as to avoid an undesirable outcome" (1957, p. 20). Beach encourages us to consider:

the communicative practices *recruited* by patients and family members when navigating their way through often complex, perhaps also foreign, medical circumstance (2001, p. 13, my emphasis).

We would do well to remind ourselves that conduct in the medical consultation also "involves reciprocity, maneuvering and bargaining by patients" (Heritage, 2013, p. xi).

Heritage has made a strong case for the implementation of CA findings in terms of practitioner intervention arguing for:

the compelling educational value of real data, in which real clinicians deal with the real dilemmas of real patients in real time. Recordings have the power to evoke analysis and reflection that is wide and deep and that is, on occasion, an important stimulus to changes in practice (2013, p. xii).

Considering its importance, empirical evidence for the effectiveness (and cost-effectiveness) of improved communication between medical professionals and patients feels sparse. Korsch and Negrete argued:

Unquestionably attention to effective communication, a skill that should not be too difficult for any trained person to master, could be a valuable contribution to health care (1972, p. 74).

Yet training medical professionals to change the way they communicate with patients is not easy. Heritage points out that some practices that function perfectly well in ordinary talk are less helpful in the medical consultation, but may be "difficult to eradicate" (2011, p. 338). We would do well to invest more energy in discovering what constitutes a trainable, learnable and sustainable communication practice.

Heritage also muses on what research in the field might look like in the future: "I believe that it will be increasingly quantitative, outcome focused, comparative and, I hope, historical" (2013, p. xi). More change is on the horizon with the introduction of new models of care and initiatives for healthcare delivery such as e-consultations and group consultations. It is easy to get caught up with the false promise of

following the new. Perhaps it might be wise at this point to take stock and ask 'what is the purpose of our work'? Are we methodologists or health service researchers, or both? Is our purpose to add to cumulative store of basic CA findings, to provide characterisations of changing medical practice or to improve patient care? Pendleton argued: "The consultation entails a working relationship and to understand its processes would be to entertain the possibility of improving its effectiveness" (1983, p. 46). Ultimately this choice will determine the focus of our work and the metric for future 'success'. Cassell (1985, p. 7) judged the meaningfulness of his analysis of doctor-patient communication by asking himself two simple questions:

- a. is it relevant to conversation as it actually occurs, day-to-day, and
- b. is it relevant to better patient care

Perhaps we might be wise to retain both?

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